HEALTH EFFECTS GROUP, INC.
P.O. Box 41778 Tucson, Arizona 85717 (602) 888-4442

Toxicology
Environmental Health
Industrial Hygiene

E.I.R. EXHIBIT 14
MFR Suntrol
DATE 6-15-93 INSPECTOR JSH

DETERMINATION OF VOLATILE EMISSIONS FROM SUNTROL WINDOW SCREEN MATERIAL

Suntrol Window Products
Suite 6
3767 E. Broadway
Phoenix, Arizona 85040

November 25, 1991

Clifton D. Crutchfield
Clifton D. Crutchfield, Ph.D.
Certified Industrial Hygienist

November 27, 1991
date

EXECUTIVE SUMMARY

A sample of degraded PVC window screen material was submitted to Health Effects Group, Inc. for characterization of volatile organic compounds emitted from the material. Employee health related complaints are potentially associated with exposures to the emissions during handling and processing of the degraded screen material.

Volatile emissions from the screens were sampled with two different techniques and submitted for qualitative mass spectral analysis. A number of different volatile compounds were detected during analysis. The major compounds detected were several different ketones, which are generally not highly toxic but can be irritating with penetrating odors.

BACKGROUND

This analysis was generated in response to a request from John Edwards, President of Suntrol Window Products, concerning volatile emissions from degraded PVC window screens that had been installed by Suntrol. The visible degradation of installed screens was accompanied by a strong odor. Employee health complaints had been registered during removal and subsequent processing of the degraded screens.

Concern about possible adverse health effects associated with employee exposures to the volatile emissions generated the request to attempt a characterization of the emissions. It was noted during phone conversations with Mr. Edwards that the odor from the screens was more predominant during hot weather, and when large amounts of the degraded screen material were stored pending return to the manufacturer.

METHODOLOGY

Two sample panels of degraded screen material (approximately 1.5 square meters) were delivered by express carrier to the HEG office on 11-6-91. The panels was held in the carrier package at room temperature until 11-8-91, at which time approximately one-half of each panel was transferred into a 4 liter glass chamber for volatile emission sample collection. Prior to insertion of the screen samples, the glass chamber was cleaned and rinsed with distilled water.

The initial sampling strategy involved concentrating volatile emissions from the screen panels onto activated charcoal and silica gel adsorption tubes. The glass chamber was sealed with an aluminum foil cap containing three sampling ports. A glass tube was inserted through one port to the bottom of the chamber. This tube served as the source of make-up air during sample collection. The remaining two ports were used for the activated charcoal and silica gel vapor adsorption tubes used to collect volatile organic compound (VOC) emissions from the screen material.

Adsorption tube sampling was conducted outdoors to minimize potential interferences from the sample make-up air. The general air flow pattern during sampling was from the ambient environment into the bottom of the glass chamber, through the screen panels, and into the vapor adsorption tubes.

Both an activated charcoal tube (SKC 226-400/200 mg) and a silica gel tube (Supelco Orbo 53) were used for VOC adsorption. A sample flow rate of 0.6 liters/min over a sampling period of 167 minutes yielded a total sample volume of 100 liters through each adsorption tube. An identical sample collection train was used outside the glass chamber to collect simultaneous control samples of ambient air in the immediate vicinity of the sample chamber.

The sample tubes were submitted for analysis to the University of Arizona Mass Spectrometry Facility on 11/8/91. Solvent extractions of the tubes were completed using carbon disulfide (charcoal tubes) and ethanol (silica gel tubes).

A second sample collection procedure employed at the analytical laboratory involved a dynamic headspace/cryogenic trap/thermal desorption technique applied to a sample of the screen material in an attempt to enhance analytical sensitivity and to look for compounds that may have co-eluted with the sorbant tube extraction compounds. This sample was also analyzed with the gas chromatograph/mass spectrometer (GC/MS).

RESULTS AND DISCUSSION

GC/MS analysis of the charcoal and silica gel adsorption tubes showed a complex mixture of very volatile compounds which eluted early from the GC. Low levels of pthalates were also detected in the samples. Use of the cryogenic trap technique to further concentrate the early eluting volatiles revealed the major components to be four to seven carbon ketones, with methyl ethyl ketone (MEK) and methyl vinyl ketone (MVK, 3-buten-2-one) being the most abundant compounds. In addition to the ketones, other compounds detected at low levels included aliphatic hydrocarbons, aldehydes, trimethylsilanol, and benzene.

Pthalates are widely used as plasticizers. Physically, pthalates tend to be stable compounds with very low vapor pressures. Physiologically, pthalates represent one of the lowest toxicity classes used in industry. They have generally also exhibited a low order of toxicity in experimental animals.

As a class, the ketones tend to be volatile liquids with characteristic odors. At concentrations greater than 300 ppm (parts per million parts air), methyl ethyl ketone has been found to be irritating to the eyes, nose, and throat. It is also capable of causing nausea at such concentrations. No permanent adverse effects have been noted following exposures to MEK of over 700 ppm. The current threshold limit value for mean 8-hour exposures to MEK is 200 ppm; the short term exposure limit for 15 min. periods is 300 ppm.

Higher order ketones such as MVK tend to be more irritating and have more penetrating odors. MVK has been characterized as having a powerfully irritating odor. Threshold limit values have not been established for MVK.

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12-12-91

Sunstrol Window Products Inc.
Attn:- John Edwards (President)

As per our phone conversation of 12-11-
Regarding the Corrugated upper window screens
manufactured by Fifer Wire Co.

I understand this re-installation to be
under warranty by the Fifer Co., and to be
replaced by Sunstrol Window Products Inc. &
it will be installed by you at no cost.

Also you will provide us with a letter
to that effect, prior to installation.

Respectfully
Lion Meredith
Manager
Monterey Apts.

MONTEREY APARTMENTS
1406 N. 85th Place, Apt. 102
Scottsdale, AZ 85257
(602) 947-6024

DONY NORECE MEREDITH - MGRS.

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AMERICA'S COMMERCIAL REAL ESTATE SERVICES, INC.

Suntrol Window Products, Inc.
3767 E. Broadway Road Suite 6
Phoenix, Arizona
85040

Attn: John E. Edwards
President

December 4,1991

Dear John,

The sunscreen material at our apartment communities, Villa del Sol Apartments located at 6231 W. McDowell Road and Lynnwood Apartments located at 5535 W. McDowell Road, appear to be deteriorating. Would you please inspect and advise as soon as possible. It is very important that we keep a neat and uniform appearence on both of our communities.

Thank you for your prompt attention to this matter.

Sincerely,

Lori M. Sneed
Operations Manager

cc: G. Offenbacher
M. Horton
S. Rhodes
file

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5535 West McDowell Road · Phoenix Arizona 85035
Tele. (602)278-2224 · Fax. (602)247-5263

3491 North Arizona Avenue
Unit 92
Chandler, Arizona 85225-1145
October 12, 1992

Mr. Greg McAdam
Suntrol Window Products
3767 East Broadway
Suite 6
Phoenix, Arizona 85040

Dear Mr. McAdam:

The window screens at my home are in very poor condition. I would like to have them replaced under the existing warranty.

The screens are breaking down. They have faded and appear to be facing the wrong direction. Touching the screens creates a powdery substance. I have been informed that the batch of screens that my screens were part of were not properly treated with a UV inhibitor. I understand that since the screens are only four years old they are still covered under the manufacturer's warranty. Therefore, I would like my window screens replaced under this warranty.

I can be reached at (602) 821-7618 during the day or (602) 892-8048 during the evening. Thank you for your prompt attention to this matter.

Sincerely,

Cheryl Oergel

Cheryl Oergel

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Property Management
- Homeowners Assoc.
- Apartment Complexes
- Office Buildings
- Leasing Services

Real Estate Sales
- Residential
- Commercial
- Industrial

CLT PROPERTIES

January 21, 1992

Suntrol Window Products, Inc.
3767 East Broadway Road, Suite 6
Phoenix, AZ 85040

Attn: John Edwards

Re: Discovery at Tatum Place II

Dear John:

Our complex received sunscreens through the Arizona Public Service screen program, and it has come to our attention that the screen material is defective and should be replaced. The screens are changing color and deteriorating rapidly.

We are aware of other properties that have had their defective sunscreens replaced and request the same consideration at our property.

Sincerely,

Tony Consentino
President

CLT Properties, Ltd.
14435 North 7th Street, Suite 101
Phoenix, Arizona 85022
Phone: 602/863-2067
Fax: 602/375-8738

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Ocotber 21, 1992

Dear Mr. Edwards,

The report that you sent me is not the same report that we spoke about at Red Robin. I have this report from Phifer.

You told me that you had conducted on your own another report that talked about cronic fatigue syndrome. Would you be so kind to send me that report which you had done, I believe you said in Colorado. I want to go over it with my doctor.

Sincerely,

Jeanette Gonzales

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October 27, 1992

Dear Mr. Edwards,

Please send me the reports you promised me. When I spoke to you at the Red Robin you told me you had a report from Colorado that you had conducted at your expense. And you told me it came back and said that the Phifer company covered up a lot of things and that they fibbed to you, and you found out on your own that you and your employees got very ill.

Since you called me today, I now know of a Tucson report. Please send me both the Colorado and Tucson reports.

I am very worried about any problems these screens caused us.

Sincerely,

Gertrude Kennedy

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E.I.R. EXHIBIT 15
MFR Sundor
DATE 6-15-93 INSPECTOR

UAB SCHOOL OF PUBLIC HEALTH

Department of Environmental Health Sciences

February 21, 1992

Mr. Anthony Gamble
Phifer Wire Products, Inc.
P.O. Box 1700
Tuscaloosa, AL 35403-1700

Dear Anthony:

We have essentially completed our assessment of the source of the odors associated with the polymer coated fiberglass screening material you recently sent to us.

In order to qualitatively describe the odors believed to be originating from the polymer coated fiberglass screen material, the initial studies in our laboratory utilized approximately 30 square centimeter samples of various aged and non-weathered screen material cut into 1 cm square pieces as representations of the bulk material.

These samples were introduced into glass vials and sealed with teflon crimp cap seals. The glass vials were placed in a Hewlett-Packard model 19354 Headspace Analyzer which was interfaced to a Hewlett-Packard model 5890 Gas Chromatograph using a Hewlett-Packard model 5971 Mass Spectrometer as the detector. The column in the gas chromatograph was a 25 meter HP5. The headspace sampler was set to a total carrier flow of 90 ml/min, with auxiliary pressure set at 1.4 bar. The sample loop in the headspace analyzer had a 1 ml total volume. The split ratio on the gas chromatograph was 1:4, with a column head pressure of 4 psi. The gas chromatograph was operated isothermally at 120 degrees centigrade. The mass spectrometer scanned from 30 to 500 m/z.

Headspace optimization included sampling a mixed composite of aged and non-weathered samples of screen material at temperatures ranging from 50 degrees centigrade to 120 degrees centigrade. It was found that peak height of compounds originating from these samples increased with temperature until 110 degrees. At temperatures higher than this a broad non-specific peak appeared indicating possible degradation of the polymer material.

Analyses carried out on aged and non-weathered samples presented evidence that release of compounds from the samples increases with

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Birmingham, Alabama 35294-0008 • (205) 934-7032 • FAX (205) 975-6341

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weathering. That is, weathered samples produced peak heights 10 - 200 times larger than non-weathered samples.

In these initial studies, the peaks from the gas chromatograph of these materials exhibited very low retention times indicating low mass, low boiling point, and possibly polar materials. Also, the peak areas were too small to obtain reliable mass spectral identification. However, comparison of these mass spectra with NBS standards indicated the following compounds as tentatively identified:

COMPOUND	CAS #
Ethanone, 1-cyclobutyl-	3019258
3-octen-2-one, 7-methyl-	33046810
1-Butanol, 3-methyl-, acetate	123922
2H-Pyran, 3,4-dihydro-6-methyl	16015115
[2,2'-Bifuran]-5,5'-dicarboxylic acid, 4	5905033
Propanamide, 2-methyl-	563837
1,2-Benzenedicarboxylic acids:	
diisooctyl	27554263
3-nitro	603112
diundecyl	3648202
diisodecyl	26761400
diheptyl	3648213
Aspidofractinine-3-methanol, (2.alpha.3	2656442

These compounds would appear to be oxidation products of monomer material coated onto the fiberglass screen, various phthalates associated with plasticizers used in the manufacture of the polymer, and pigment used in coloring the screen material.

It cannot be overstressed that these were initial studies and were only tentative identifications. In order to further characterize material believed to be released from vinyl coated screens we installed a 3 ml sample loop on a Hewlett-Packard Headspace sampler interfaced to a Hewlett-Packard 5890 Gas Chromatograph using a Hewlett-Packard 5970 Mass Spectrometer as the detector,and we installed a more polar column.

Two studies have been completed with this new configuration, specifically, a temperature study and a series of analyses of vinyl coated screen materials. Conditions for the studies were as follows:

The headspace sampler bath was set at a series of temperatures ranging from 100 to 140 degrees centigrade. Samples were analyzed at 100, 110, 120, 130, and 140 degrees centigrade. Auxiliary flow was set to 1 bar pressure as was the carrier gas. This resulted in a flow of 80 ml/min to the gas chromatograph.

The gas chromatograph was set to a split vent flow of 20 ml/min resulting in a total of 100 ml/min flow. The purge vent was set to 5 ml/min resulting in a 1:20 split ratio. The gas chromatograph was operated at 120 degree centigrade initially for 7 minutes then ramped to 250 degrees centigrade at 10 degrees centigrade per minute, then programmed to remain at that temperature for 10 minutes. A Hewlett-Packard FFAP 50 meter x 0.2 uM column was installed for these analyses.

The mass spectrometer was programmed to scan from 35 to 450 M/Z.

For the series of vinyl coated samples, the headspace sampler operated at 140 degrees centigrade. Each sample consisted of approximately 24 square inches of material rolled into the headspace sampler vial.

Increasing temperature of the headspace sampler resulted in successively higher amounts of degradation materials to be transferred to the gas chromatograph. Seven peaks were predominant in this series of samples, indicating at least seven separate compounds. There were also several other small peaks with signals too low to provide sufficient qualitative information for characterization.

Three samples of differing materials were analyzed at 140 degrees centigrade. These included the bronze vinyl coated fiberglass from Arizona, the gray vinyl coated material included with the bronze material, and another sample of gray vinyl coated material from a round mailing tube. Each of these samples exhibited similar chromatographic behavior. That is, they all exhibited the same seven peaks as shown on the associated chromatographs attached to this report.

The mass spectra of each of these peaks was matched with NBS standard spectra and the ten best matches were listed for each peak. A list of the seven most likely compounds from this analysis also is attached. It can been inferred from this data that these compounds represent oxidation products of the vinyl material and associated plasticizers.

It can be envisioned that different product ratios can be formed depending on environmental conditions. The major product appears to be a small molecular weight ketone, amine or acid formed from oxidative cleavage of HCl from the polyvinylchloride. This can result in the formation of chlorinated polyenes, low molecular weight compounds such as propanes, cyclopropanes and butanes, cyclobutanes, and their associated acids. These compounds typically exhibit high vapor pressures, thus the odors associated with aging of the vinyl coating.

The seven compounds identified by us as being released from the weathered screen materials are ketones, amines, and low molecular weight organic acids. I have surveyed the toxicology

literature for information on the potential adverse health effects that might result from exposure to these materials. As I suspected there was very little information in the literature as to the human toxicity of these compounds. However, it is well recognized that compounds such as these (i.e. ketones, amines, and weak organic acids) can be strong irritants to the nose, eyes, upper respiratory tract, and mucous membranes. Signs and symptoms related to exposure to these compounds might in some cases mimic those of a cold or flu. These would consist of eye irritation or red eyes, a runny nose, a raspy feeling in the throat, some hoarseness, and possibly bronchitis. Since these are all irritant effects it is to be expected that once the offending agent was removed, then these symptoms should reverse themselves and the health status should revert back to normal. It is important to stress that chronic or long-term effects resulting form exposure to these agents is not to be expected.

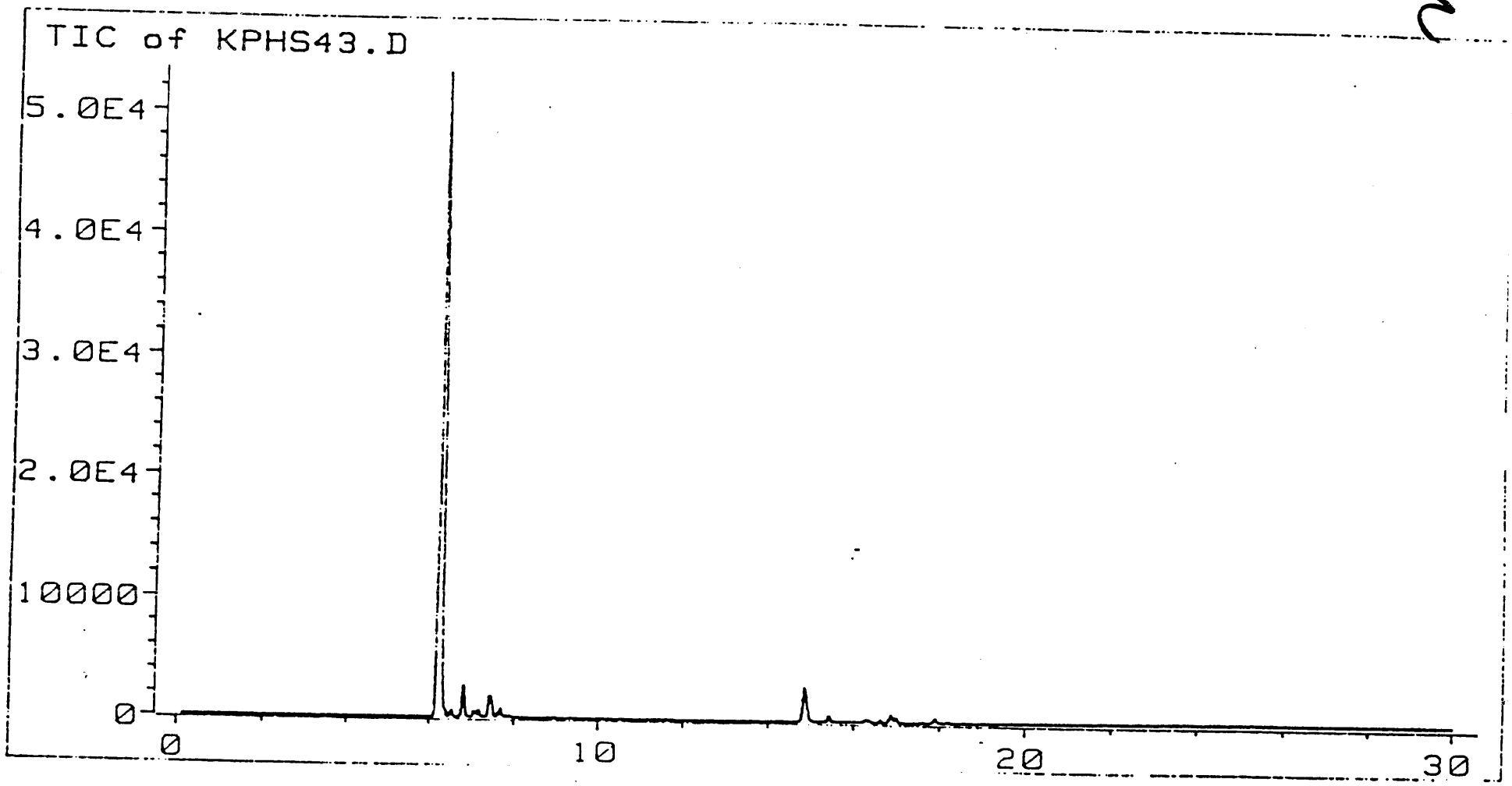
I hope this provides you with the information needed. If you have any questions concerning our analyses and/results or need any additional information, please do not hesitate to contact me. As always, I remain

Sincerely yours,

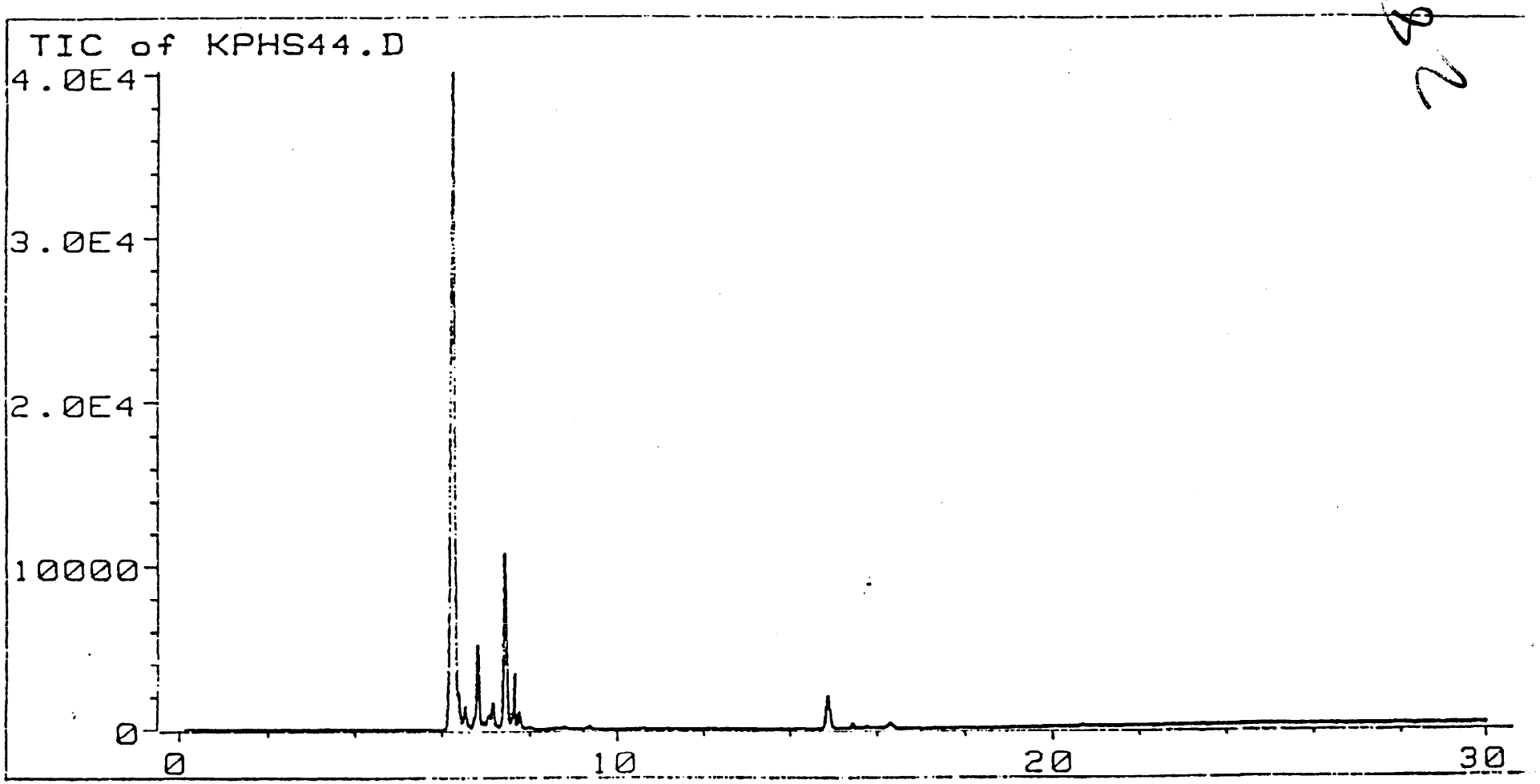
Robert G. Meeks, Ph.D., D.A.B.T.

CHEMICALS IDENTIFIED AS BEING PRESENT IN
THE WEATHERED SCREENING MATERIAL SUPPLIED BY
PHIFER WIRE, INC.

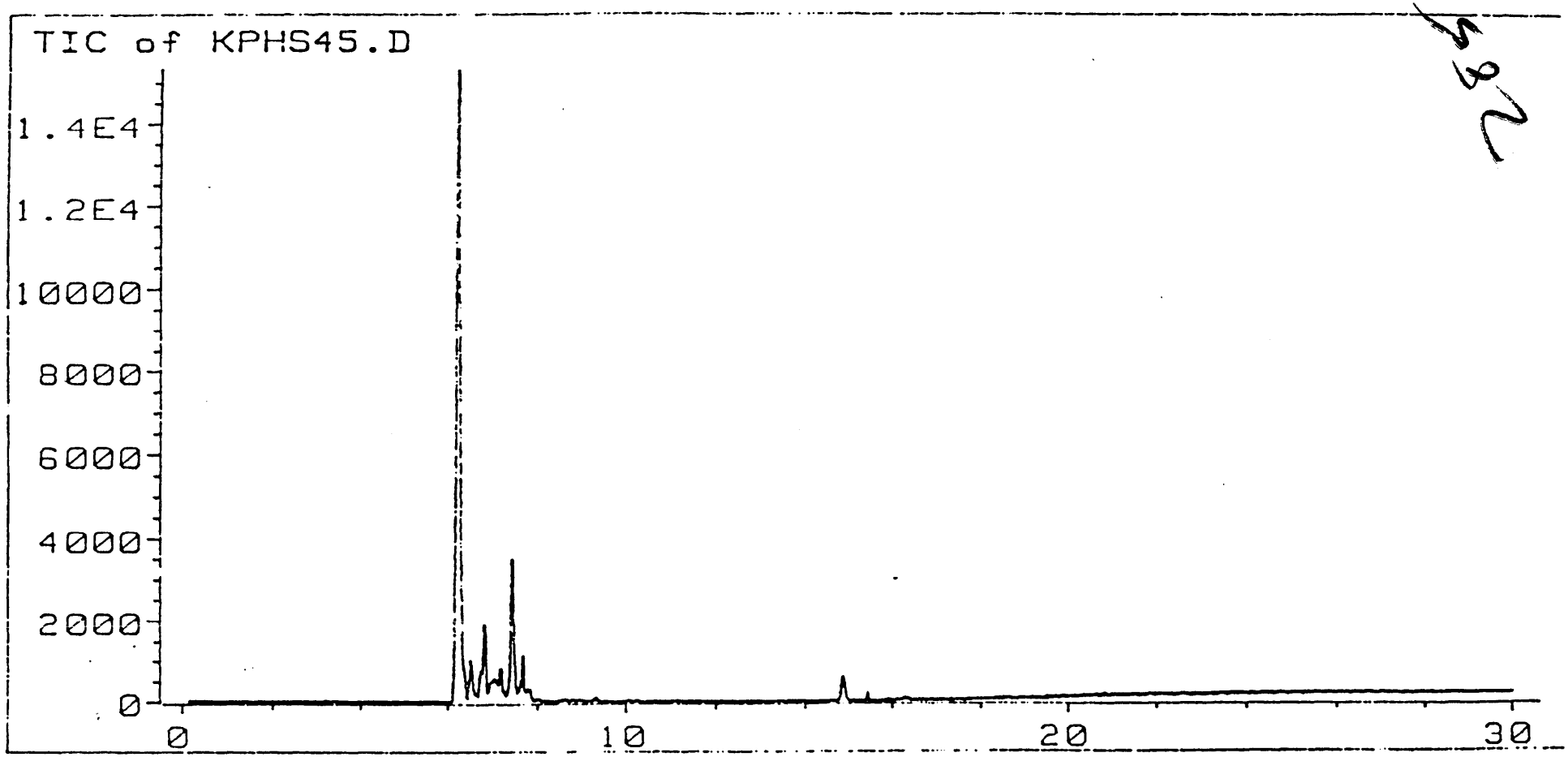
Peak 1	2-Pentanamine, 4-methyl-	CAS #108-09-8
Peak 2	Butanoic Acid, 3-oxo-,2-methylpropyl	CAS #7779-75-1
Peak 3	2-Pentanone, 5-chloro	CAS #5891-21-4
Peak 4	Propane, 1,1'sulfonylbis	CAS #598-03-8
Peak 5	Ethanone, 1-cyclobutyl-	CAS #3019-25-8
Peak 6	2-Butanone, 4-butoxy-3-methyl-	CAS #54340-94-2
Peak 7	Acetamide, N-[2-[3,4-dihydroxy-.alpha.	CAS #28177-12-0



BRONZE VINYL COATED FIBERGLASS

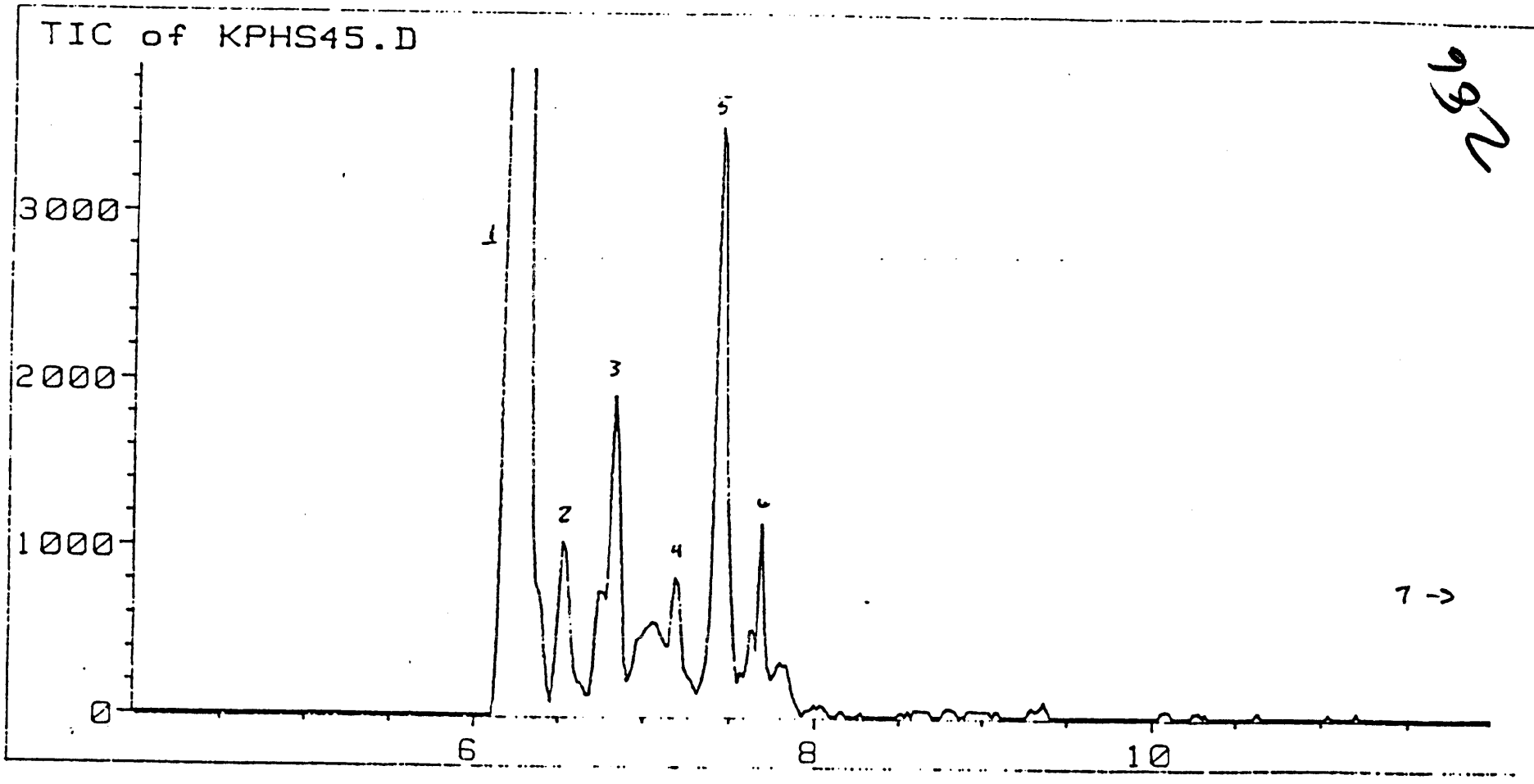


GRAY VINYL COATED FIBERGLASS



582

GRAY VINYL COATED FIBERGLASS FROM MAILING TUBE


TIC of KPHS45.D
3000
2000
1000
0
6
8
10
1
2
3
4
5
6
7 ->
266

Final 1

LIBRARY SEARCH RESULTS

Scan 344 (6.322 min) of KPHS45.D
GRAY VINYL COATED FIBERGLASS FROM MAILING TUBE

Library file: DATA:NBS_REVE.L
Library name: NBS MASS SPECTRAL DATABASE

	CAS #	Library Index #	Match Quality
1: 2-Pentanamine, 4-methyl- (9CI)	108098	1391	9794
2: 2-Hexanamine, 4-methyl- (9CI)	105419	2523	9785
3: 2-Butanamine, 3-methyl- (9CI)	598743	686	9771
4: Dodecanoic acid, 11-amino-, methyl ester	56817926	19553	9771
5: 2-Heptanamine (9CI)	123820	2525	9764
6: 2-Butanamine, 3,3-dimethyl- (9CI)	3850304	1398	9761
7: 2-Hexanamine (9CI)	5329793	1401	9754
8: Cyclopropane, 1-bromo-1,2-dichloro- (8CI	24071634	13622	9733
9: Cyclopropane, 1,1-dibromo-2-chloro-2-flu	24071576	22007	9733
10: Phenol, 4-[2-(methylamino)ethyl]- (9CI)	370989	7330	9726

RETRIEVE
Which match (1 to 10):

Y: Set of 4 MS
X: Scan 344 (6.322 min) of KP

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Scan 342 (6.282 min) of KPHS45.D
GRAY VINYL COATED FIBERGLASS FROM MAILING TUBE

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
38.10	28	42.10	72	45.95	43	56.05	46
40.00	1531	44.00	10000	55.05	21	57.05	44
41.10	201	45.00	146				

LIBRARY SEARCH RESULTS

Scan 355 (6.526 min) of KPHS45.D
GRAY VINYL COATED FIBERGLASS FROM MAILING TUBE peak #2

Library file: DATA:NBS_REVE.L
Library name: NBS MASS SPECTRAL DATABASE

		CAS #	Library Index #	Match Quality
1:	Butanoic acid, 3-oxo-, 2-methylpropyl es	7779751	8653	9237
2:	Nickel, [5,6,17,18-tetrahydrotetrabenzo[	72101349	37007	8912
3:	Propane, 2-(ethenyloxy)- (9CI)	926658	637	8745
4:	Propanamide, 2-methyl- (9CI)	563837	676	8634
5:	1H-Cyclonona[1,2-c:5,6-c']difuran-1,3,6,	21794014	36955	8607
6:	Butanoic acid, 2,2-diacetyl-3-oxo-, ethy	19446516	17412	8519
7:	Acetamide, N-[2-(acetyloxy)-2-[4-(acetyl	55145647	28994	8505
8:	1-Butanamine, 3-methyl-N-(3-methylbutyl)	28023747	13259	8481
9:	Pentylamine, N-isobutyl-N-nitroso- (8CI)	28023805	13260	8477
10:	4,15:5,10-Dimethanobenzofuro[3',2':7,8][	24945935	34414	8462

RETRIEVE
Which match (1 to 10):

Y: #8653 Butanoic acid, 3-oxo
X: Scan 355 (6.526 min) of KP

LIBRARY SEARCH RESULTS

Scan 372 (6.832 min) of KPHS45.D
GRAY VINYL COATED FIBERGLASS FROM MAILING TUBE
Peak #?

Library file: DATA:NBS_REVE.L
Library name: NBS MASS SPECTRAL DATABASE

		CAS #	Library Index #	Match Quality
1:	2-Pentanone, 5-chloro- (8CI9CI)	5891214	2947	9869
2:	s-Indacen-1(2H)-one, 3,5,6,7-tetrahydro-	54889597	15484	9780
3:	3-Pentenoic acid, 4-methyl- (8CI9CI)	504858	2318	9765
4:	2-Hexanone, 5-methyl- (8CI9CI)	110123	2398	9765
5:	3(2H)-Furanone, 4-hydroxy-5-(hydroxymeth	66727944	6171	9708
6:	1-Propen-2-ol, acetate (8CI9CI)	108225	1242	9699
7:	3-Penten-2-one, 4-methyl-, O-methyloxime	56336119	3707	9681
8:	2-Propanone, 1-(1-methylethoxy)- (9CI)	42781124	2629	9673
9:	2-Pentanone, 5-(acetyloxy)- (9CI)	5185977	6188	9648
10:	Acetic acid, 2-propenyl ester (9CI)	591877	1249	9632

RETRIEVE
Which match (1 to 10):

Y: #2947 2-Pentanone, 5-chlor
X: Scan 372 (6.832 min) of KP

E.I.R. EXHIBIT 16
MFR Santrol
DATE 6-15-93 INSPECTOR [illegible]

January 15, 1992

Mr. Anthony Gamble
Phifer Wire Products, Inc.
P.O. Box 1700
Tuscaloosa, AL 35403-1700

Bob Hoff
3-pages

Dear Anthony:

Below is a discussion of the progress we have made in assessing the source of the odor associated with the polymer coated fiberglass screening material you recently sent to us.

In order to qualitatively describe odors believed to be originating from polymer coated fiberglass screen material our laboratory utilized approximately 30 square centimeter samples of various aged and non-weathered screen material cut into 1 cm square pieces as representations of the bulk material.

These samples were introduced into glass vials and sealed with teflon crimp cap seals. The glass vials were placed in a Hewlett-Packard model 19354 Headspace Analyzer which was interfaced to a Hewlett-Packard model 5890 Gas Chromatograph using a Hewlett-Packard model 5971 Mass Spectrometer as detector. The column in the gas chromatograph was a 25 meter HP5. The headspace sampler was set to a total carrier flow of 90 ml/min, with auxiliary pressure set at 1.4 bar. The sample loop in the headspace analyzer had a 1 ml total volume. The split ratio on the gas chromatograph was 1:4, with a column head pressure of 4 psi. The gas chromatograph was operated isothermally at 120 degrees centigrade. The mass spectrometer scanned from 30 to 500 m/z.

Headspace optimization included sampling a mixed composite of aged and non-weathered samples of screen material at temperatures ranging from 50 degrees centigrade to 120 degrees centigrade. It was found that peak height of compounds originating from these samples increased with temperature until 110 degrees. At temperatures higher than this a broad non-specific peak appeared indicating possible degradation of the polymer material.

Analyses carried out on aged and non-weathered samples presented evidence that release of compounds from the samples increases with weathering. That is, weathered samples produced peak heights 10 -

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200 times larger than non-weathered samples.

The peaks from the gas chromatograph of these materials exhibited very low retention times indicating low mass, low boiling point, and possibly polar materials. Also, the peak areas were too small to obtain reliable mass spectral identification. However, comparison of these mass spectra with NBS standards indicated the following compounds as tentatively identified:

COMPOUND	CAS #
Ethanone, 1-cyclobutyl-	3019288
3-octen-2-one, 7-methyl-	33046810
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2H-Pyran, 3,4-dihydro-6-methyl	16015115
[2,2'-Bifuran]-5,5'-dicarboxylic acid, 4	5905033
Propanamide, 2-methyl-	563837
1,2-Benzenedicarboxylic acids:	
diisooctyl	27554263
3-nitro	603112
diundecyl	3648202
diisodecyl	26761400
diheptyl	3648213
Aspidofractinine-3-methanol, (2.alpha.3	2656442

These compounds appear to be oxidation products of monomer material coated onto the fiberglass screen, various phthalates associated with plasticizers used in the manufacture of the polymer, and pigment used in coloring the screen material.

It cannot be overstressed that these are only tentative identifications. In order to further define these materials, a larger sample loop has been installed on the headspace analyzer, and a more polar column has been installed in the gas chromatograph. This should allow us to introduce more of the sample into the gas chromatograph/mass spectrometer, and allow for better separation of these oxidation products. Work is continuing on screen materials and on hand tool materials associated with screen installation.

We are in the process of re-analyzing these samples utilizing the modifications described above. We should have the results these analyses by the end of this week or the first part of next week. I will forward the results as soon as possible.

If you would like me to discuss the possible health effects of these compounds with any of your customers, please let me know and I will be more than happy to do so.

Sincerely yours,

Robert G. Meeks